

IN THE CLAIMS:

Please amend the claims as follows:

Claims 1-41 (cancelled)

Claim 42. (currently amended) A process for preparing controlled release compositions characterized by burst-free, sustained, programmable release of biologically active agents or active core, comprising: dissolving biodegradable poly(lactide/glycolide), in uncapped form and biodegradable poly(lactide/glycolide) in end-capped form in methylene chloride, and dissolving a biologically active agent or active core in water; adding the aqueous layer to the polymer solution and emulsifying to provide an inner water-in-oil (w/o) emulsion; stabilizing the w/o emulsion in a solvent-saturated aqueous phase containing an oil-in-water (o/w) emulsifier; adding said w/o emulsion to an external aqueous layer containing oil-in-water emulsifier to form a ternary emulsion; and stirring the resulting water-in-oil (w/o/w) emulsion for sufficient time to remove said solvent, and rinsing hardened microcapsules with water and lyophilizing said hardened microcapsules.

Claim 43. (Currently amended) The process of Claim 42 wherein a solvent-saturated external aqueous phase is added to emulsify the inner inner w/o emulsion prior to addition of the external aqueous layer, to provide microcapsules of narrow size distribution range between 0.05-500 μ m.

Claim 44. (currently amended) The process of Claim 42 wherein a low temperature of about 0-4 degree C is provided during preparation of the inner w/o emulsion, and a low temperature of about 4-20 degree C is provided during preparation of the w/o/w emulsion to provide a stable emulsion and efficient ~~high~~-encapsulation ~~efficiency~~.

Claim 45. (currently amended) A process for preparing controlled release characterized by burst-free, sustained, programmable release of biologically active agents, comprising: dissolving biodegradable poly(lactide/glycolide) in end-capped form in methylene chloride, and dissolving a biologically active agent or active core in water; adding the aqueous layer to the polymer solution and emulsifying to provide an inner water-in-oil emulsion; stabilizing the w/o emulsion in a solvent-saturated aqueous phase containing a an oil-in-water (~~o/s~~) emulsifier; adding said stabilized w/o emulsion to an external aqueous layer containing oil-in-water (w/o/w) emulsion for sufficient time to remove said solvent; and rinsing hardened microcapsules with water; and lyophilizing said hardened microcapsules.

Claim 46. (currently amended) The process of Claim 42 wherein a 100/0 blend of uncapped and end-capped polymer is used to provide release of the biologically active agents or active core in a continuous and sustained manner without a lag phase.

Claim 47. (original) The process of Claim 45 wherein a solvent-saturated external aqueous phase is added to emulsify the inner w/o emulsion prior to addition of the external aqueous layer, to provide microcapsules of narrow size distribution range between 0.05-500 μ m.

Claim 48. (currently amended) The process of claim 45 wherein a low temperature of about 0-4 degree C is provided during preparation of the inner w/o emulsion, and a low temperature of about 4-20 degree C is provided during preparation of the w/o/w emulsion to provide a stable emulsion and efficient ~~high~~-encapsulation efficiency.

Claims 49-157 (canceled)

Claim 158. (previously added) The process of claim 42, wherein the biologically active agent is a polypeptide.

Claim 159. (previously added) The process of claim 158, wherein said polypeptide is any of the vaccine agents against enterotoxigenic E. coli selected from the group consisting CFA/I, CFA/II, CS1, CS3, CS6, and CS17, ETEC-related enterotoxins, and combinations thereof.

Claim 160. (previously added) The process of claim 159, wherein said polypeptide is CFA/I.

Claim 161. (previously added) The process of claim 160, wherein said CFA/I polypeptide is synthetic and is selected from the group of synthetic peptides containing the CFA/I pilus protein T-cell epitopes (~~Starting Sequence # given~~)

4(Asn-Ile-Thr-Val-Thr-Ala-Ser-Val-Asp-Pro),
8(Thr-Ala-Ser-Val-Asp-Pro-Val-Ile-Asp-Leu),
12(Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp),
15(Ile-Asp-Leu-Leu-Gln-Ala-Asp-Gly-Asn-Ala),
20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val),
26(Pro-Ser-Ala-Val-Lys-Leu-Ala-Tyr-Ser-Pro),
72(Leu-Asn-Ser-Thr-Val-Gln-Met-Pro-Ile-Ser),
78(Met-Pro-Ile-Ser-Val-Ser-Trp-Gly-Gly-Gln),
87(Gln-Val-Leu-Ser-Thr-Thr-Ala-Lys-Glu-Phe),
126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr), and
133(Gly-Asn-Tyr-Ser-Gly-Val-Val-Ser-Leu-Val), and mixtures thereof;
synthetic peptides containing CFA/I pilus protein B-cell (antibody) epitopes (starting sequence given)

3(Lys-Ana-Ile-Thr-Val-Thr-Ala-Ser-Val),
11(Val-Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp),
22(Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val),
32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe-Lys-Thr-Phe-Glu-Ser-Tyr-Arg-Val),
32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe),
38(Lys-Thr-Phe-Glu-Ser-Tyr-Arg-Val),
66(Pro-Gln-Leu-Thr-Asp-Val-Leu-Asn-Ser),
93(Ala-Lys-Glu-Phe-Glu-Ala-Ala-Ala),
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr),

127(Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser),
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Thr-Ser), and mixtures thereof; and
synthetic peptides containing CFA/I pilus protein T-cell and B-cell (antibody) epitopes (starting sequence # given)

3(Lys-Asn-Ile-Thr-Val-Thr-Ala-Ser-Val-Asp-Pro),
8(Thr-Ala-Ser-Val-Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp),
11(Val-Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp),
20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val),
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser), and
126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser), and mixtures thereof.

Claim 162. (currently amended) The process of claim 42, wherein release ~~profiles~~ of ~~variable~~ rates and duration are achieved by blending said uncapped and said end-capped forms of poly(lactide/glycolide) polymer in different ~~ratios~~ amounts within the same microcapsule, wherein the greater the amount of uncapped form of said poly(lactide/glycolide) in relation to end-capped form of said poly(lactide/glycolide), the faster the release rate and the shorter the release duration.

Claim 163. (Previously added) The process of claim 42, wherein when the ratio of uncapped polymer to end-capped polymer is increased, the release rate of the active ingredient increases.

Claim 164. (previously added) The process of claim 42, wherein the uncapped polymer and end-capped polymer is present in ratios ranging from 100/0 to 1/99, respectively.

Claim 165. (previously added) The process of claim 42, wherein the uncapped polymer and end-capped polymer is present in ratios ranging from 90/10 to 40/60.

Claim 166. (currently amended) The process of claim 42, wherein the ~~relative~~ ratio between the lactide and glycolide (L/G) component is within the range of 40/60 to 0/100.

Claim 167. (currently amended) The process of claim 42, wherein the ~~relative~~ ratio between the lactide and glycolide (L/G) component is within the range of 90/10 to 40/60.

Claim 168. (currently amended) The process of claim 42, wherein the ~~relative~~ ratio between the lactide and glycolide (L/G) component is within the range of 48/52 to 52/48.